

A NEW SPECIES OF CALIPYRGULA (HYDROBIIDAE)
FROM THE PLEISTOCENE OF TEXAS

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In the course of studies on the fossil molluscan faunas in the late Cenozoic continental deposits of western and southwestern Texas, sponsored jointly by the University of Texas Bureau of Economic Geology, and The National Science Foundation under the terms of a contract (NSF-G3481) between National Science Foundation and the University of Kansas, shells of an undescribed species of hydrobiid gastropod in late Pleistocene deposits in the Pecos River Valley were discovered.

The new species is assigned to the genus *Calipyrgula* Pilsbry, because of the general resemblance to other species now assigned to that genus, and the great difficulty of establishing actual relationships among hydrobiid snails in the absence of the soft parts. There is no proof that the species described by Leonard and Franzen (1944, p. 19) from the early Pliocene Laverne Formation are in fact congeneric with those described by Pilsbry (1934, p. 541) or that the species under consideration here is congeneric with either of the two previously described groups of species assigned to the genus *Calipyrgula*. Admitting the widely separated localities of occurrence and considerations of stratigraphic occurrence (Leonard and Franzen, 1944; Pilsbry, 1955), it seems unlikely that all these species are actually congeneric, but there seems little to be gained by proposing generic names for the species concerned.

CALIPYRGULA PECOSENSIS, new species. Plate 11, figs. 1-3.

Diagnosis: A minute hydrobiid gastropod, having an elongate, narrowly conic, imperforate or narrowly rimate shell of 7 or 8 rounded whorls; small aperture; simple, ovate peristome, reflected over umbilicus and adherent to last whorl above; simple and well incised suture.

Calipyrgula pecosensis (pl. 11, figs. 1-3) most closely resembles *C. hibbardi* Leonard and Franzen, (figs. 4, 5) but differs in having a more slender shell, one or two more whorls, less elongately oval aperture (figs. 1, 2, 5) and more strongly twisted and slightly heavier columellar axis (figs. 3, 4).

Holotype: Catalogue number 11265, University of Kansas Museum of Natural History, obtained by A. B. Leonard and

Tong-Yun Ho, 6 June 1959. Original number, ABL 1012A.

Description of holotype: Shell elongately conic, imperforate, small (total length, 4.42 mm., diameter, 1.27 mm.), last whorl relatively large, comprising approximately one-half the total length of shell; spire narrow, slender, tapering gradually to relatively blunt apex; aperture ovate, higher than wide (height, 0.97 mm., diameter 0.71 mm.); peristome simple, inner margin reflected over umbilicus, and closely adherent to last whorl above; whorls 8, well rounded at periphery; suture simple, deeply incised; one and one-half apical whorls finely granulate having waxy texture, remaining whorls having closely spaced, delicate, vertical growth ridges not clearly visible without magnification, and extremely delicate incised spiral grooves, visible only with high magnification.

Paratypes: Little variation occurs among the more than 1000 paratypes collected from 6 localities, although a few individuals (Pl. 11, fig. 2), are less narrowly elongate than is the holotype and have proportions that more nearly approach those of *Calipyrgula hibbardi*. The extremes of variation are exemplified by the measurements (in millimeters) of 4 paratypes (catalogue number, 11266) from the type locality.

Total length	Diameter	Height Aperture	Diameter Aperture	No. of whorls
4.80	1.32	0.97	0.73	8
4.80	1.50	0.97	0.75	8
4.20	1.57	1.05	1.05	7
3.97	1.50	1.05	0.75	7

On a few paratypical shells, the fine, incised spiral sculpture is somewhat better developed, especially on the last whorl, than on the holotype, but on none is the sculpture a conspicuous feature. Rarely, individual shells possess irregularly distributed, strong, vertical ridges, seemingly produced by fusion of the usual, fine, more numerous vertical ridges. Still other rare specimens have the peristome erect, not reflected over the minute umbilicus, and standing free of the last whorl above. Paratypical specimens have been deposited at the Museum of Comparative Zoology, Harvard University, Cambridge, Massachusetts.

Type locality: Late Pleistocene deposits exposed in left bank of Pecos River, 3.5 miles northeast of Imperial, in Crane County, Texas.

Stratigraphic distribution: Each of the six collecting localities from which *Calipyrgula pecosensis* has been recovered consists of late Pleistocene terrace deposits, exposed by subsequent degra-

dation of the channel of the Pecos River. If *C. pecosensis* is biologically congeneric with *C. hibbardi*, of the early Pliocene Laverne Formation of northwestern Oklahoma (Leonard and Franzen, 1944, p. 19), the genus is unaccounted for in the region of its known occurrence east of the Rocky Mountains, through most of late Cenozoic time.

Areal distribution and ecology: *Calipyrgula pecosensis* is now known only from exposures along the Pecos River, southwestern Texas, distributed from Pecos River at bridge on U. S. Highway 290, 3 miles southeast of Sheffield, Pecos County, to one mile east of the city of Pecos, in Ward County. Although the latter locality provided the most abundant population of all the local deposits from which the species was collected, we were unable to discover examples farther upstream.

The 6 localities from which *C. pecosensis* was collected, together with approximate numbers of specimens taken at each locality, are:

Right bank of Pecos River, near bridge on U. S. Highway 290, 3 miles southeast of Sheffield, Pecos County, Texas; 5 specimens.

Right bank of Pecos River, 5 miles northeast of Buena Vista, Pecos County, Texas; 50 specimens.

Left bank of Pecos River, 3.5 miles northeast of Imperial, in Crane County, Texas; 400 specimens. (Type locality.)

Left bank of Pecos River, 3 miles northwest of Imperial, in Crane County, Texas; 300 specimens.

Left bank of Pecos River, 3 miles southwest of Grand Falls, Ward County, Texas; 250 specimens.

Left bank of Pecos River, one mile east of Pecos, in Ward County, Texas; 350 specimens.

Little is known of the ecological requirements of *Calipyrgula pecosensis*. Judging from the lithology of the sediments in which it has been found (finely and well sorted silts and fine sand, having humic stains and marl development), this snail thrived in sluggish streams or in marshes; this view is strengthened by the occurrence with it of numerous individuals of *Physa anatina*, *Ferrissia parallela*, *Pisidium* sp., and a species of ostracod. So far as known, however, no other prosobranchiate gastropod occurs with *C. pecosensis*.

LITERATURE CITED

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SUCCINEA AUREA LEA AND S. PYRITES, NEW

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Succinea aurea was described by Lea (Proc. Amer. Philos. Soc. 2:32, 1841. Trans. Amer. Philos. Soc. 9:4, 1846) from specimens collected at Springfield, Ohio. During the spring of 1958, the author visited Springfield to collect this species. Two species of Succineidae, *Oxyloma retusa* (Lea) and *Quickella vermeta* (Say), were found in abundance in that area.

In his description, Lea states: "This is a beautiful little species, remarkable for its fine surface and bright golden colour. In form it is nearly allied to *vermeta*. (Say.)" *Quickella vermeta* is sometimes of a bright golden color, especially when it lives in sunny situations. *Succinea aurea* is undoubtedly based on *Quickella vermeta*, and the Atlantic Coastal species which has borne this name is a different species.

For this Atlantic Coastal species, the author proposes the name *Succinea pyrites*, new species. It is described by H. A. Pilsbry, Land Mollusca of North America (North of Mexico) 2:815-818, figs. 441a, b; 442E (holotype), F. Type locality: Cape May, New Jersey, holotype 67795, paratypes 247364 & 189420 A.N.S.P., other paratypes 20614, collection of the author.

Of the localities cited by Pilsbry for *Succinea aurea*, those from near the Atlantic Coast from Virginia to New Jersey are probably all *Succinea pyrites*. In the authors experience, *S. pyrites* is confined to salt marshes and the records from western New York need to be verified anatomically before being accepted. The records from Yammasee, South Carolina; Wells, York Co., Maine; and Barnstable Co., Massachusetts, are based on immature shells which are unidentifiable. The record from Oldtown, Ohio, is based on an immature specimen of *Oxyloma retusa* (Lea). The records from Cincinnati, Ohio, and Clark Co., Indiana, are undoubtedly based on *Quickella vermeta* which is a very common snail along the Ohio River.